

(19) World Intellectual Property
Organization
International Bureau



551 576

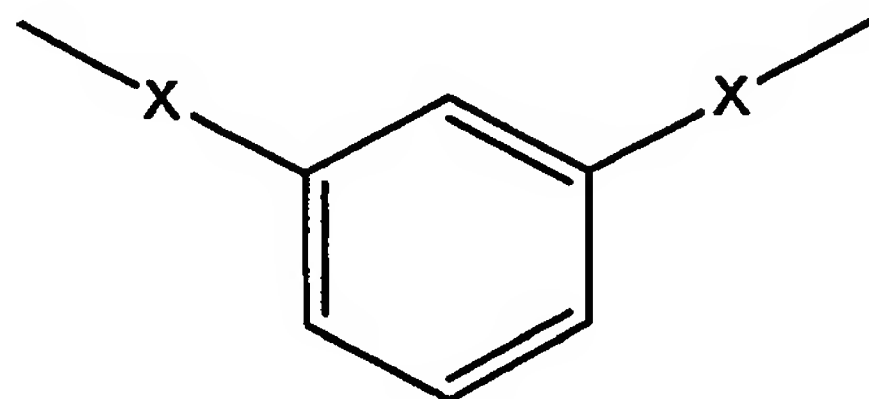
(43) International Publication Date
14 October 2004 (14.10.2004)

PCT

(10) International Publication Number
WO 2004/088778 A2

- (51) International Patent Classification⁷: **H01M 8/00**
- (21) International Application Number: **PCT/GB2004/001401**
- (22) International Filing Date: **1 April 2004 (01.04.2004)**
- (25) Filing Language: **English**
- (26) Publication Language: **English**
- (30) Priority Data:
0307623.9 **2 April 2003 (02.04.2003)** **GB**
- (71) Applicant (for all designated States except US): **VICTREX MANUFACTURING LIMITED** [GB/GB]; Victrex Technology Centre, Hillhouse International, Thornton Cleveleys, Lancashire FY5 4QD (GB).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **CHARNOCK, Peter** [GB/GB]; 7 Elvaston Road, Carleton, Poulton-Le-Fylde, Lancashire FY6 7TH (GB). **DEVINE, John, Neil** [GB/GB]; 32 Sheringham Way, Poulton Le Fylde, Lancashire FY6 7EE (GB). **WILSON, Brian** [GB/GB]; 1 White Lea, Cabus, Garstang, Lancashire PR3 1JG (GB).
- (74) Agents: **NEILL, Alastair, William et al.**; Appleyard Lees, 15 Clare Road, Halifax HX1 2HY (GB).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:
— without international search report and to be republished upon receipt of that report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **POLYMERIC MATERIALS**



(A)

(57) Abstract: A polymer electrolyte membrane or gas diffusion electrode includes an ion-conducting polymeric material which includes moieties of formula (A) which are substituted on average with more than 1 and 3 or fewer groups (e.g. sulphonate groups) which provide ion-exchange sites and hydrogen atoms of said moieties are optionally substituted, wherein each X in said moieties of formula A independently represent an oxygen or sulphur atom. The ion conducting polymeric material is suitably prepared by controllably sulphonating a polymeric material using about 100% sulphuric acid at 34°C to 36°C.

WO 2004/088778 A2